

Amendments to the Specification:

Please replace paragraph [0046] (including page 11, line 2, to page 15, line 2), as filed, with the following amended paragraphs:

[0046]

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings:

FIG. 1 shows a light-emitting element according to an aspect of the present invention;

FIG. 2 shows a light-emitting element according to an aspect of the present invention;

FIG. 3 shows a light-emitting element according to an aspect of the present invention;

FIGS. 4A and 4B each show a light-emitting device;

FIGS. 5A to 5E each show an electronic device;

FIG. 6 is a $^1\text{H-NMR}$ chart of 3-[*N*-(9-phenylcarbazole-3-yl)-*N*-phenylamino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[:]];

FIG. 7 is a $^1\text{H-NMR}$ chart of 3-[*N*-(9-phenylcarbazole-3-yl)-*N*-phenylamino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[:]];

FIG. 8 is a graph showing absorption spectra of 3-[*N*-(9-phenylcarbazole-3-yl)-*N*-phenylamino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[:]];

FIG. 9 is a graph showing light-emission spectra of 3-[*N*-(9-phenylcarbazole-3-yl)-*N*-phenylamino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[:]];

FIG. 10 is a $^1\text{H-NMR}$ chart of 3, 6-bis[N-(9-phenylcarbazole-3-yl)-N-phenylamino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[:]];

FIG. 11 is a $^1\text{H-NMR}$ chart of 3, 6-bis[N-(9-phenylcarbazole-3-yl)-N-phenylamino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[:]];

FIG. 12 is a graph showing absorption spectra of 3, 6-bis[N-(9-phenylcarbazole-3-yl)-N-phenylamino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[:]];

FIG. 13 is a graph showing light-emission spectra of 3, 6-bis[N-(9-phenylcarbazole-3-yl)-N-phenylamino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[:]];

FIG. 14 is a graph showing results in thermogravimetric measurement of 3-[N-(9-phenylcarbazole-3-yl)-N-phenylamino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[:]];

FIG. 15 is a graph showing results in thermogravimetric measurement of 3, 6-bis[N-(9-phenylcarbazole-3-yl)-N-phenylamino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[:]];

FIG. 16 is a graph showing C-V characteristics of 3-[N-(9-phenylcarbazole-3-yl)-N-phenylamino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[:]];

FIG. 17 is a graph showing C-V characteristics of 3, 6-bis[N-(9-phenylcarbazole-3-yl)-N-phenylamino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[:]];

FIG. 18 is a graph showing results obtained by a differential scanning calorimetry analysis of 3-[N-(9-phenylcarbazole-3-yl)-N-phenylamino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[:]];

FIG. 19 is a graph showing results obtained by a differential scanning calorimetry analysis of 3, 6-bis[N-(9-phenylcarbazole-3-yl)-N-phenylamino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[:]]:

FIG. 20 is a ^1H -NMR chart of 3-(N-phenylamino)-9-phenylcarbazole;

FIG. 21 is a ^1H -NMR chart of 3-(N-phenylamino)-9-phenylcarbazole;

FIG. 22 is a ^1H -NMR chart of 3-[N-(1-naphthyl)amino]-9-phenylcarbazole 3-[N-(1-naphthyl)amino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[:]]:

FIG. 23 is a ^1H -NMR chart of 3-[N-(1-naphthyl)amino]-9-phenylcarbazole 3-[N-(1-naphthyl)amino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[:]]:

FIG. 24 is a ^1H -NMR chart of 3-[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-phenylcarbazole 3-[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[:]]:

FIG. 25 is a ^1H -NMR chart of 3-[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-phenylcarbazole 3-[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[:]]:

FIG. 26 is a graph showing results in thermogravimetric measurement of 3-[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-phenylcarbazole 3-[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[:]]:

FIG. 27 is a graph showing absorption spectra of 3-[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-phenylcarbazole 3-[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[:]]:

FIG. 28 is a graph showing light-emission spectra of 3-[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-phenylcarbazole 3-[N-(1-naphthyl)-N-(9-

phenylcarbazole-3-yl)amino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[::]]:

FIG. 29 is a graph showing C-V characteristics of 3-[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-phenylcarbazole 3-[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[::]]:

FIG. 30 is a graph showing results obtained by a differential scanning calorimetry analysis of 3-[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-phenylcarbazole 3-[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-phenylcarbazole which is a carbazole derivative of the present invention[[::]]:

FIGS. 31A and 31B are each a $^1\text{H-NMR}$ chart of 3-[N-[9-(4-biphenylyl)carbazole-3-yl]-N-phenylamino]-9-(4-biphenylyl)carbazole which is a carbazole derivative of the present invention[[::]]:

FIGS. 32A and 32B are each a $^{13}\text{C-NMR}$ chart of 3-[N-[9-(4-biphenylyl)carbazole-3-yl]-N-phenylamino]-9-(4-biphenylyl)carbazole which is a carbazole derivative of the present invention[[::]]:

FIG. 33 is a graph showing absorption spectra of 3-[N-[9-(4-biphenylyl)carbazole-3-yl]-N-phenylamino]-9-(4-biphenylyl)carbazole which is a carbazole derivative of the present invention[[::]]:

FIG. 34 is a graph showing light-emission spectra of 3-[N-[9-(4-biphenylyl)carbazole-3-yl]-N-phenylamino]-9-(4-biphenylyl)carbazole which is a carbazole derivative of the present invention[[::]]:

FIGS. 35A and 35B each are a $^1\text{H-NMR}$ chart of 3,6-dibromo-9-(4-biphenylyl)carbazole;

FIGS. 36A and 36B each are a $^{13}\text{C-NMR}$ chart of 3,6-dibromo-9-(4-biphenylyl)carbazole;

FIGS. 37A and 37B each are a ^1H -NMR chart of $3,6\text{-bis}[N\text{-}(1\text{-naphthyl})\text{-}N\text{-}(9\text{-phenylcarbazole-3-yl)amino}]\text{-}9\text{-}(4\text{-biphenyl)carbazole}$ $3,6\text{-bis}[N\text{-}(1\text{-naphthyl})\text{-}N\text{-}(9\text{-phenylcarbazole-3-yl)amino}]\text{-}9\text{-}(4\text{-biphenyl)carbazole}$;

FIGS. 38A and 38B each are ^{13}C -NMR chart of $3,6\text{-bis}[N\text{-}(1\text{-naphthyl})\text{-}N\text{-}(9\text{-phenylcarbazole-3-yl)amino}]\text{-}9\text{-}(4\text{-biphenyl)carbazole}$ $3,6\text{-bis}[N\text{-}(1\text{-naphthyl})\text{-}N\text{-}(9\text{-phenylcarbazole-3-yl)amino}]\text{-}9\text{-}(4\text{-biphenyl)carbazole}$;

FIG. 39 is a graph showing absorption spectra of $3,6\text{-bis}[N\text{-}(1\text{-naphthyl})\text{-}N\text{-}(9\text{-phenylcarbazole-3-yl)amino}]\text{-}9\text{-}(4\text{-biphenyl)carbazole}$ $3,6\text{-bis}[N\text{-}(1\text{-naphthyl})\text{-}N\text{-}(9\text{-phenylcarbazole-3-yl)amino}]\text{-}9\text{-}(4\text{-biphenyl)carbazole}$;

FIG. 40 is a graph showing light-emission spectra of $3,6\text{-bis}[N\text{-}(1\text{-naphthyl})\text{-}N\text{-}(9\text{-phenylcarbazole-3-yl)amino}]\text{-}9\text{-}(4\text{-biphenyl)carbazole}$ $3,6\text{-bis}[N\text{-}(1\text{-naphthyl})\text{-}N\text{-}(9\text{-phenylcarbazole-3-yl)amino}]\text{-}9\text{-}(4\text{-biphenyl)carbazole}$;

FIG. 41 shows a light-emitting element in Examples;

FIG. 42 is a graph showing current density-luminance characteristics of the light-emitting element which is formed in Example 8;

FIG. 43 is a graph showing voltage-luminance characteristics of the light-emitting element which is formed in Example 8;

FIG. 44 is a graph showing current density-luminance characteristics of the light-emitting element which is formed in Example 9;

FIG. 45 is a graph showing voltage-luminance characteristics of the light-emitting element which is formed in Example 9;

FIG. 46 is a graph showing current density-luminance characteristics of the light-emitting element which is formed in Example 10;

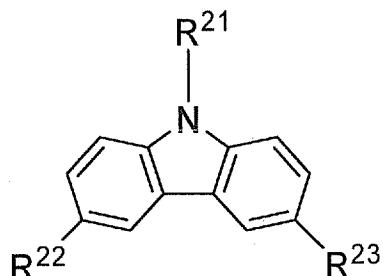
FIG. 47 is a graph showing voltage-luminance characteristics of the light-emitting element which is formed in Example 10;

FIG. 48 is a DSC chart of $3\text{-}\{N\text{-}[9\text{-}(4\text{-biphenyl)carbazole-3-yl)]\text{-}N\text{-phenylamino}\}\text{-}9\text{-}(4\text{-biphenyl)carbazole}$; and

FIG. 49 is a DSC chart of ~~3,6-bis[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-(4-biphenyl)carbazole~~ 3,6-bis[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-(4-biphenyl)carbazole.

Please replace paragraph [0066], as filed, with the following amended paragraph.

[0066]



(5)

wherein R²¹ represents hydrogen, an alkyl group having carbon atoms 1 to 6, an aryl group having carbon atoms 6 to 25, a heteroaryl group having carbon atoms 5 to 9, an arylalkyl group, or an acyl group having carbon atoms 1 to 7; R²² and R²³ represent a substituent represented by the general formula (6); in the substituent represented by the general formula (6), R²⁴ represents hydrogen, an alkyl group having carbon atoms 1 to 6, an aryl group having carbon atoms 6 to 25, a heteroaryl group having carbon atoms 5 to 9, an arylalkyl group, or an acyl group having carbon atoms 1 to 7; Ar²¹ represents an aryl group having carbon atoms 6 to 25, or a heteroaryl group having carbon atoms 5 to 9; and R²⁵ represents hydrogen, an alkyl group having carbon atoms 1 to 6, or a heteroaryl an aryl group having carbon atoms 6 to 12.

Please replace paragraph [0185], as filed, with the following amended paragraph.

[0185]

As for a solution used in the CV measurement, dehydrated dimethylformamide (DMF) was used as a solvent. ~~Tetraperchlorate-*n*-butylammonium~~ Tetra-*n*-

butylammonium perchlorate (*n*-Bu₄NClO₄), which was a supporting electrolyte, was dissolved in the solvent such that the concentration of the tetraperchlorate-*n*-butylammonium tetra-*n*-butylammonium perchlorate was 100 mmol/L. Also, the PCzPCA1, which was an object to be measured, was dissolved therein such that the concentration thereof was set to be 1 mmol/L. Further, a platinum electrode (a PTE platinum electrode, BAS Inc.) was used as a work electrode. A platinum electrode (a VC-3 Pt counter electrode (5 cm), BAS Inc.) was used as an auxiliary electrode. An Ag/Ag⁺ electrode (an RE 5 nonaqueous reference electrode, BAS Inc.) was used as a reference electrode.

Please replace paragraph [0196], as filed, with the following amended paragraph.

[0196]

Under nitrogen, 30 ml of dehydrated xylene was added to a mixture of 2.5mg (5 mmol) 2.5 g (5 mmol) of 3,6-diido- 9-phenylcarbazole, 3.4g (10 mmol) of PCA, 30 mg (0.05 mmol) of bis(dibenzylidene acetone) palladium (0), 0.2 mL of a hexane solution with 49 wt% of tri-*tert*-butylphosphine, and 3.0 g (30mmol) of sodium-*tert*-butoxide. This mixture was stirred while heating under nitrogen atmosphere at 90°C for 6.5 hours. After the termination of the reaction, about 500 ml of heated toluene, was added to the suspension and this suspension was filtered through florisil, alumina and Celite®. The thus obtained filtrate was concentrated and the concentrated solution was purified by using silica gel column chromatography (toluene : hexane=1:1). This was concentrated and hexane-ethyl acetate was added thereinto to conduct recrystallization. 2.5 g (the yield: 55 %) of 3, 6-bis[*N*-(9-phenylcarbazole-3-yl)-*N*-phenylamino]-9-phenylcarbazole which was cream-colored powder, was obtained. NMR data are shown below. ¹H-NMR (300MHz,DMSO-d): δ =6.74-6.80 (m, 6H), 7.08-7.64 (m, 33H), 7.94-8.04 (m, 6H). FIG. 10 shows a chart of ¹H-NMR, and FIG. 11 shows an enlarged view of the portion of 6.50 to 8.50 ppm in FIG. 10.

Please replace paragraph [0201], as filed, with the following amended paragraph.

[0201]

As for a solution used in the CV measurement, dehydrated dimethylformamide (DMF) was used as a solvent. Tetraperchlorate-*n*-butylammonium Tetra-*n*-butylammonium perchlorate (*n*-Bu₄NCIO₄), which was a supporting electrolyte, was dissolved in the solvent such that the concentration of the tetraperchlorate-*n*-butylammonium tetra-*n*-butylammonium perchlorate was 100 mmol/L. Also, the PCzPCA2, which was an object to be measured, was dissolved such that the concentration thereof was set to be 1 mmol/L. Further, a platinum electrode (a PTE platinum electrode, BAS Inc.) was used as a work electrode. A platinum electrode (a VC-3 Pt counter electrode (5 cm), BAS Inc.) was used as an auxiliary electrode. An Ag/Ag⁺ electrode (an RE 5 nonaqueous reference electrode, BAS Inc.) was used as a reference electrode.

Please replace paragraph [0205] with the following amended paragraph.

[0205]

A synthesis method of 3-[*N*-(1-naphthyl)-*N*-(9-phenylcarbazole-3-yl)-amino]-9-phenylcarbazole 3-[*N*-(1-naphthyl)-*N*-(9-phenylcarbazole-3-yl)amino]-9-phenylcarbazole (PCzPCN1), which is represented by the structural formula (17), will be described as one example of a carbazole derivative of the present invention.

Please replace paragraph [0207] with the following amended paragraph.

[0207]

[Step 1]

A synthesis method of 3-[N-(1-naphthyl)amino]-9-phenylcarbazole 3-[N-(1-naphthyl)amino]-9-phenylcarbazole (PCN) is described. A synthesis scheme of PCN is shown by (A-9).

Please replace paragraph [0209] with the following amended paragraph.

[0209]

Under nitrogen, 12 ml of dehydrated xylene was added to a mixture of 3.7g (10 mmol) of 3-iodo-9-phenylcarbazole, 1.6 g (5mmol) of 4-aminonaphthalene 1-aminonaphthalene, 60 mg (0.1 mmol) of bis(dibenzylideneacetone)palladium(0), 0.2 mL of a hexane solution with 49 wt% of tri-*tert*-butylphosphine, and 3.0 g (30mmol) of sodium-*tert*-butoxide. This mixture was stirred while heating under nitrogen atmosphere at 90°C for 7 hours. After the termination of the reaction, about 200 ml of heated toluene was added to the suspension and this suspension was filtered through florisil, alumina and Celite®. The thus obtained filtrate was concentrated and the concentrated solution was purified by using silica gel column chromatography (toluene : hexane=1:1). This was concentrated and the obtained concentrated solution was recrystallized with hexane-ethyl acetate. 1.5 g (the yield: 79 %) of 3-[N-(1-naphthyl)amino]-9-phenylcarbazole 3-[N-(1-naphthyl)amino]-9-phenylcarbazole which was cream-colored powder, was obtained. NMR data are shown below. ¹H-NMR (300MHz,DMSO-d): δ =7.13-7.71 (m, 15H), 7.85-7.88 (m, 1H), 8.03 (s, 1H), 8.15 (d, J =7.8, 1H), 8.24 (s, 1H), 8.36-8.39 (m, 1H). FIG. 22 shows a chart of ¹H-NMR, and FIG. 23 shows an enlarged view of the portion of 6.50 to 8.50 ppm in FIG. 22.

Please replace paragraph [0210] with the following amended paragraph.

[0210]

[Step 2]

Next, a synthesis method of ~~3-[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl) amino]-9-phenylcarbazole~~ 3-[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl) amino]-9-phenylcarbazole (PCzPCN1) is described. A synthesis scheme of PCzPCN1 is represented by (A-10).

Please replace paragraph [0217] with the following amended paragraph.

[0217]

As for a solution used in the CV measurement, dehydrated dimethylformamide (DMF) was used as a solvent. Tetraperchlorate-*n*-butylammonium Tetra-*n*-butylammonium perchlorate (*n*-Bu₄NCIO₄), which was a supporting electrolyte, was dissolved in the solvent such that the concentration of the tetraperchlorate-*n*-butylammonium tetra-*n*-butylammonium perchlorate was 100 mmol/L. Also, the PCzPCN1, which was an object to be measured, was dissolved such that the concentration thereof was set to be 1 mmol/L. Further, a platinum electrode (a PTE platinum electrode, BAS Inc.) was used as a work electrode. A platinum electrode (a VC-3 Pt counter electrode (5 cm), BAS Inc.) was used as an auxiliary electrode. An Ag/Ag⁺ electrode (an RE 5 nonaqueous reference electrode, BAS Inc.) was used as a reference electrode.

Please replace paragraph [0223] with the following paragraph.

[0223]

1.60 mg (4.33 mmol) of 3-iodo-9-phenylcarbazole, 19.0 mg (0.1 mmol) of copper iodide(I), 1.10 g (10 mmol) of *tert*-butoxy potassium, 1.0 mL of tri-*n*- butylphosphine (0.2 mol/L dehydrogenated dehydrated hexane solution) were put in a 200-mL three-neck flask, and the atmosphere of the flask was substituted by nitrogen, 10 mL of xylene, 0.2 mL of aniline (2.1 mmol, 195.6 mg) were added thereto, and refluxed at 135 °C for 6

hours. The reaction solution was cooled at a room temperature, and 100 mL of toluene was added thereto, then the mixture was filtered through florisil, and Celite®. The obtained filtrate was washed with water twice and the water phase was extracted with toluene twice, the extracted solution and an organic phase which was washed with water were mixed and washed with saturated sodium chloride solution, and dried with magnesium sulfate. The solution was filtrated naturally, and a compound obtained by concentrating the filtrate was subjected to silica gel chromatography (a mixture solution of toluene and hexane) to obtain an objective substance. 140 mg (the yield : 21 %) of a light-yellow solid was obtained.

Please replace paragraph [0225] with the following amended paragraph.

[0225]

Example 5 will describe another synthesis method of ~~3-[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-phenylcarbazole~~ 3-[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-phenylcarbazole (PCzPCN1) represented by the structural formula (17), which is a different method from that of Example 3. A synthesis scheme of PCzPCN1 is shown by (D-2).

Please replace paragraph [0227] with the following amended paragraph.

[0227]

3.69 g (0.01 mol) of 3-iodo-9-phenylcarbazole, 716 mg (5 mmol) of ~~1-naphthylamine~~ 1-naphthylamine, 385 mg (2 mmol) of copper iodide, 2.74g (0.02 mol) of potassium carbonate, and 771mg (0.02 mol) of 18-crown 6-ether were put in a 200-mL three-neck flask, and the atmosphere of the flask was substituted by nitrogen, 8 mL of DMPU was added thereto, and stirred at 170° C for 24 hours. The reaction solution was cooled at a room temperature, washed with water twice and water phase was extracted

with toluene twice, the extracted solution and organic phase, which had been washed in advance, were mixed and washed with saturated sodium chloride solution, and dried with magnesium sulfate. The solution was filtrated naturally, and a compound obtained by concentrating the filtrate was purified with silca gel chromatography (hexane: toluene= 7:3) to obtain an objective substance, i.e., 1.52g (the yield : 48 %) of a light-yellow solid.

Please replace paragraph [0233] with the following amended paragraph.

[0233]

12 g (50 mmol) of 4-bromobiphenyl, 8.4 g (50 mmol) of carbazole, 230 mg (1 mmol) of palladium acetate, 1.8 g (3.0 mmol) of 1,1-bis(diphenylphosphino)ferrocene, and 13 g (180 mmol) of sodium-*tert*-butoxide were added in a three-neck flask and the atmosphere of the flask was substituted by nitrogen, and then, 80 mL of dehydrogenated dehydrated xylene was added, and deaerated. Under nitrogen atmosphere, it was stirred at 120 °C for 7.5 hours. After the termination of the reaction, about 600 mL of heated toluene was added to this suspension, and filtrated twice through florisil, alumina and Celite®. The obtained filtrate was concentrated and hexane was added thereto, recrystallization was conducted. This was filtrated, and the residue was collected and dried to obtain 14 g (the yield: 87%) of 9-(4-biphenyl) carbazole which was cream-colored powder.

Please replace paragraph [0242] with the following amended paragraph.

[0242]

3.7 g (9.2 mmol) of 3-bromo-9-(4-biphenyl)carbazole, 63 mg (0.3 mmol) of palladium acetate, 330 mg (0.6 mmol) of 1,1-bis(diphenylphosphino) ferrocene, and 1.5 g (15 mmol) of sodium-*tert*-butoxide were added in a three-neck flask and the

atmosphere of the flask was substituted by nitrogen, and then, 20 mL of dehydrogenated dehydrated xylene was added, and deaerated. Then, 9.3g (10mmol) of aniline was added thereto. Under nitrogen atmosphere, it was stirred at 130 °C for 4 hours. After the termination of the reaction, about 300 mL of heated toluene was added to this suspension, and filtrated through florisil, alumina and Celite®. The obtained residue was concentrated and hexane was added thereto. Then, it was precipitated by ultra sonic wave. This was filtrated, and the filtrate was dried to obtain 3.5 g (the yield : 93 %) of *N*-(4-biphenyl)carbazole-3-yl]-*N*-phenylamine (BCA) which was cream-colored powder.

Please replace paragraph [0245] with the following amended paragraph.

[0245]

3.5 g (7.9 mmol) of 3-iodo-9-(4-biphenyl)carbazole, 3.3 g (8.0 mmol) of *N*-(4-biphenyl)carbazole-3-yl]-*N*-phenylamine, 230 mg (0.4 mmol) of bis(dibenzylideneacetone)palladium (0) and 1.2 g (12 mmol) of sodium-*tert*-butoxide were added in a three-neck flask and the atmosphere of the flask was substituted by nitrogen, and then, 30 mL of dehydrogenated dehydrated xylene was added, and deaerated. 1.4mL (1.2 mmol) of a hexane solution with 10 wt % of tri-*tert*-butylphosphine was added thereto. Under nitrogen atmosphere, it was stirred at 110 °C for 3 hours. After the termination of the reaction, about 500 mL of heated toluene was added to this suspension, and filtrated through florisil, alumina and Celite®. The obtained filtrate was concentrated and was obtained using silica gel column chromatography (toluene : hexane=1:1). This was concentrated and hexane is added thereto. Then, it was precipitated by ultra sonic wave. 1.1 g (the yield: 19 %) of 3-{*N*-(4-biphenyl)carbazole-3-yl]-*N*-phenylamino}-9-(4-biphenyl)carbazole (BCzBCA1), which was cream-colored powder, was obtained. Data of ¹H-NMR was shown below.
¹H-NMR (300MHz, DMSO-d): δ =6.86 (t, J =7.2, 1H), 6.94 (d, J =7.8, 2H), 7.18-7.24 (m,

4H), 7.30 (dd, $J = 8.9, 1.8$, 2H), 7.41-7.54 (m, 12H), 7.70 (d, $J = 8.4$, 4H), 7.77 (d, $J = 7.2$, 4H), 7.94 (d, $J = 8.4$, 4H), 8.06 (d, $J = 2.1$, 2H), 8.12 (d, $J = 7.8$, 2H). FIGS. 31A and 31B each show a chart of ^1H -NMR, and FIG. 31B shows an enlarged view of the portion of 6.0 to 9.0 ppm in FIG. 31A. Data of ^{13}C -NMR was shown below. (75.5MHz, DMSO-d): $\delta = 109.6, 110.7, 117.4, 119.4, 119.7, 119.8, 120.5, 120.5, 122.4, 123.7, 125.0, 126.2, 126.5, 126.8, 127.5, 128.1, 128.8, 136.0, 136.9, 139.1, 139.1, 140.6, 140.8, 149.3$. FIG. 32 shows a chart of ^{13}C -NMR. FIG. 32B shows an enlarged view of the portion of 6.0 to 9.0 ppm in FIG. 32A.

Please replace paragraph [0249] with the following amended paragraph.

[0249]

A synthesis method of ~~3,6-bis[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-(4-biphenyl)carbazole~~ 3,6-bis[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-(4-biphenyl)carbazole (BCzPCN2), which is represented by the structural formula (71), will be described as one example of a carbazole derivative of the present invention.

Please replace paragraph [0254] with the following amended paragraph.

[0254]

[Step 2] A synthesis method of ~~3,6-bis[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-(4-biphenyl)carbazole~~ 3,6-bis[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-(4-biphenyl)carbazole (BCzPCN2) is described. A synthesis scheme of BCzPCN2 is represented by (C-2).

Please replace paragraph [0256] with the following amended paragraph.

[0256]

2.4 g (5.0 mmol) of 3,6-dibromo-9-(4-biphenyl)carbazole, 3.8 g (10 mmol) of PCN, 580 mg (1.0 mmol) of bis (dibenzylideneacetone) palladium (0), 6.0mL (3mmol) of a hexane solution with 10wt % of tri-*tert*-butylphosphine, and 3.0g (30mmol) of sodium-*tert*-butoxide were added and the atmosphere of the flask was substituted by nitrogen, and then, 10 mL of dehydrogenated dehydrated xylene was added, and deaerated. This was heated to be stirred at 130 °C for 12 hours. After the termination of the reaction, about 550 mL of heated toluene was added to this suspension, and filtrated through florisil, alumina and Celite®. The obtained filtrate was concentrated and was obtained using silica gel column chromatography (toluene : hexane= 2:1). This was concentrated and hexane was added thereto. Then, it was precipitated by ultra sonic wave. 2.7 g (the yield : 51 %) of 3,6-bis[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-(4-biphenyl)carbazole 3,6-bis[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-(4-biphenyl)carbazole (BCzPCN2), which was a lemon-colored powder, was obtained. Data of NMR is shown below. $^1\text{H-NMR}$ (300MHz, DMSO-d): δ = 6.88-7.67 (m, 45H), 7.76-7.79 (d, J = 7.8, 4H), 7.84-7.86 (d, J = 7.8, 2H), 7.97-7.99 (d, J = 7.8, 2H). FIGS. 37A and 37B each show a chart of $^1\text{H-NMR}$, and FIG. 37B shows an enlarged view of the portion of 6.0 to 9.0 ppm in FIG. 37A. Data of $^{13}\text{C-NMR}$ is shown below. (75.5MHz, DMSO-d): δ = 109.3, 110.1, 110.5, 113.3, 113.3, 114.5, 114.6, 119.4, 120.2, 122.0, 122.2, 123.1, 123.2, 123.3, 124.0, 124.7, 125.2, 125.6, 125.9, 126.2, 126.4, 126.5, 127.1, 127.4, 127.9, 128.1, 128.7, 129.7, 129.8, 134.8, 135.8, 136.1, 136.7, 136.8, 138.8, 139.0, 140.4, 142.9, 143.3, 144.8. FIGS. 38A and 38B each show a chart of $^{13}\text{C-NMR}$. FIG. 38B shows an enlarged view of the portion of 100 to 150 ppm in FIG. 38A.

Please replace paragraph [0278] with the following amended paragraph.

[0278]

The substrate provided with the first electrode was fixed on a substrate holder which was provided in a vacuum evaporation apparatus, in such a way that the surface provided with the first electrode faces downwardly. After that, the air inside the vacuum evaporation apparatus was evacuated to about 10^{-4} Pa. Then, a 50-nm thick film of 3-[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-phenylcarbazole 3-[N-(1-naphthyl)-N-(9-phenylcarbazole-3-yl)amino]-9-phenylcarbazole (PCzPCN1) represented by the structural formula (17), was formed by an evaporation using resistant heating, thereby forming a hole injecting layer 2103 on the first electrode 2102.